

Technical Disclosure Commons

Defensive Publications Series

August 01, 2018

Dual Multipool Pendant Socket

Verena Schwaiger

Bertrandt Ingenieurbüro GmbH

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

Schwaiger, Verena, "Dual Multipool Pendant Socket", Technical Disclosure Commons, (August 01, 2018)
https://www.tdcommons.org/dpubs_series/1386



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

DUAL MULTIPOOL PENDANT SOCKET

Technical Task:

The electrical connection of the set of signals and the electrical loads of trailers is made with help of a connector plug, which is located at the trailer, and a junction box at the vehicle. This junction box can be integrated directly to the trailer coupling.

So far, connecting the trailer to the vehicle is only possible through a 7-pole or 13-pole connector plug. If there are several trailers with both 7-pin and 13-pin plugs connected to the vehicle, an adapter that is able to switch from 7-pin to 13-pin or from 13-pin to 7-pin, needs to be connected with each other.

Initial Situation:

In order to deal with this situation, an additional adapter is needed, so that a trailer with a 7-pin electric connector plug can be connected to the 13-pin standard connector of the trailer coupling. With older vehicle models, it needs to be the other way around.

Thereby, additional costs arise. Furthermore, the connection line, which consists of socket, adapter and plug, has to be extended structurally. Furthermore, the adapter needs to be carried along separately during disuse.

Solution:

The solution to this is an extension of the existing junction box, which is integrated in the trailer hitch, with an additional junction box on each side.

Thereby, one junction box is 7-pin, the other one is 13-pin. Thus, every trailer can be connected to the vehicle without an additional adapter.

Figure 1 shows a possible way of realizing the idea. The junction box integrated into the tow bar (1) can be connected on both sides with the help of a 13-pin connector on the one side and a 7-pin connector on the other side. The assignment of the connection corresponds to the current valid ISO standards: IS 111446 for the 13-pin side, ISO 1724 for the 7-pin side. The connections are covered by a hinged lid, which is automatically closed by a spring in the unused state.

The electrical allocation for the contacts is made with a connection cable (3) from the vehicle, which is guided from below into the dual junction box. Once the trailer hitch is firmly connected to the vehicle, the connection cable is also firmly connected to the junction box. If the trailer hitch is removable, the connection cable must also be plugged in and removed from the vehicle.

Advantages:

- Significant gain of comfort,
- no extra costs,
- extension of functional area, as well as
- unique selling proposition compared to the competition.

Technical innovation

Figure 1

